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ABSTRACT

This study was designed to determine the correlates or potential risk factors which predict whether an adolescent who drinks or uses drugs will refrain from driving under the influence, or will drive in this condition. A group of 426 rural high school seniors completed a questionnaire which assessed drug use patterns and previously identified risk factors for substance use and abuse. A little over one-half of this group reported not driving when they were drunk or high, 27.7 percent did so once or twice, 15 percent did so between 3 and 10 times, and the remaining 2.8 percent drove a car while under the influence of drugs 11 or more times. Nine significant predictors of driving while under the influence were identified: (1) amounts of alcohol consumed at a time; (2) binge drinking patterns; (3) levels of drug usage at school or school events; (4) presence of drug user support groups at school; (5) history of getting into trouble with drugs; (6) involvement in extracurricular activities; (7) perceptions of the harmfulness of drugs; (8) perceived knowledge gained from exposure to drug education messages; and (9) being a male. These predictors indicated the need for prevention programming which targets specific behaviors, perceptions, and alternative experiences to alcohol and drug use, and which does not exclusively fall into the school domain. (Author/LLL)

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**Adolescents Who Drive Under The Influence:
Correlates and Risk Factors**

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ABSTRACT

Driving while intoxicated or while high on other drugs can be a deadly experience for anyone. This study was designed to determine the correlates or potential risk factors which predict whether an adolescent, who drinks or uses drugs, will refrain from driving under the influence or will, in fact, drive in this condition. A total of 426 rural high school seniors completed a large questionnaire which assessed drug use patterns and previously identified risk factors for substance use and abuse. While a little over a half of this group did not drive when they were drunk or high, 27.7% did so once or twice, 15% did so between three and ten times, and the remaining 2.8% drove a car while under the influence of drugs eleven or more times. Regression analysis identified nine significant predictors of driving while under the influence which accounted for over 42% of the variance. Amounts of alcohol consumed at a time, binge drinking patterns, levels of drug usage at school or school events, presence of drug user support groups at school, history of getting into trouble with drugs, involvement in extracurricular activities, perceptions of the harmfulness of drugs and perceived knowledge gained from exposure to drug education messages predicted driving while drunk or high. Males were also more likely to drive under the influence than females. Results are discussed in terms of their relevance for prevention programs.

Adolescents Who Drive Under The Influence:**Correlates and Risk Factors**

Driving while under the influence of alcohol or other drugs can be a deadly experience for anyone. Motor vehicle accidents are the leading cause of injury deaths in the United States (Baker, O'Neil, & Karpf, 1984). For instance, during 1987, a total of 46,386 people in the United States died as a consequence of traffic crashes. Approximately one-half of these fatalities were alcohol-related (NHTSA, 1988a).

Accidents are the number one cause of death in the United States for people between the ages of 5 and 34. Approximately 40 percent of all adolescent deaths (ages 15 to 19) occur in traffic crashes (NHTSA, 1988b). Recent studies within various states indicate that children, adolescents, and young adults report significant levels of riding with someone who has been drinking alcohol and/or of driving after drinking, and as a consequence, represent a disproportionate number of arrests for driving while intoxicated (e.g. Wisconsin State Department of Public Instruction, 1989; Maryland State Department of Legislative Reference, 1987).

The recent proliferation of MADD and SADD chapters across the country attests to the national concern to reduce the number of adolescents driving under the influence (DUI). The current study was designed to determine the correlates or potential risk factors which predict whether an adolescent, who drinks or uses drugs, will refrain from driving under the influence or will, in fact, drive in

this condition.

Review of Risk Factors for DUI

Attempts to explain DUI behavior have investigated the relationships between DUI behaviors and a range of risk factors which include demographic characteristics, patterns of alcohol and drug use, psycho-social variables, and attitudes (i.e. Dresser et al, 1989; Donovan, Marlatt, & Salzberg, 1983; Farrow, 1988; Farrow & Brissing, 1990; Mookherjee, 1988). The nature of these DUI risk-taking behaviors are discussed below.

Demographic Influences

Gender differences in risk-taking behaviors, in general, and more specifically, drinking and driving, have been well documented (e.g. Donovan, Marlatt, & Salzberg, 1983; Farrow, 1987a; Farrow & Brissing, 1990; Mookherjee, 1988). Farrow (1987a) found adolescent males demonstrated significantly more reckless intent in dangerous driving situations with or without alcohol or other drugs. Adolescents who are at greatest risk appeared to view the automobile as an extension of social events. That is, travel to and from an event is perceived to be integral to the event. If drinking is a primary or associated activity at a given event, drinking in an automobile or operating it under the influence when going to and from, is likely to occur.

The gender differences in the attitudes toward driving while intoxicated were recently investigated by Farrow and Brissing (1990). Although females reported higher levels of consumption,

their attitudes toward driving while intoxicated appeared more consistent with social mores which view the behavior negatively. Also, adolescent women were seen to be more sensible in the assessment of a dangerous driving situation involving alcohol or other drugs.

Dresser et. al. (1989) analyzed the substance use patterns and associated risk-taking behaviors of seven university subpopulations which included the four undergraduate levels, graduate students, faculty, and staff on a campus in the northeastern part of the U.S.. Their results suggested that alcohol and drug use, as well as the associated risk-taking behaviors including DUI, vary considerably with both age and the social environment or campus peer cultures.

Patterns of Alcohol and Drug Usage

The recently published results of a Behavioral Risk Factor Surveillance Survey which was conducted through a cooperative agreement between the Idaho Department of Health and Welfare and the Center for Disease Control cites the prevalence of "at-risk" characteristics for DUI (State of Idaho, 1990). In this telephone survey of 1,742 Idaho citizens, the results paralleled national trends in alcohol use, the risks associated with drinking and driving, and DUI behavior.

The total prevalence of those having had alcoholic beverages during the past month was 47.4 percent. Binge drinking (having five or more drinks on an occasion one or more times during the

past month) was reported by 11.5% of Idahoans. Although below the reported national norm (3.1%), a significant number of citizens of the State of Idaho were identified as being at risk for drinking and driving (i.e., defined as driving after having too much to drink, one or more times during the past month) at 2.2%.

These three use indicators were used to build a risk index (State of Idaho, 1990). Since males reported higher levels of alcohol consumption (55.6%), higher levels of binge drinking (18.6%), over five times as much chronic drinking (having sixty or more drinks during the past month) than females, males were more likely to be at risk for DUI. In fact higher levels of DUI behavior for males was noted and this was especially apparent for adolescents and young adults between the ages of 18 and 24 years old. Within that age group, males were more likely to report DUI behavior than females at a rate of 12.7% to 2.3%.

Psychosocial Variables

Farrow (1987b) compared the risk-taking behaviors of young DUI offenders (aged 16 to 21) and non-offenders. All adolescents reported a poor conception of dangerous driving consequences when alcohol is involved. However, young DUI offenders appeared more likely to address boredom by hanging out with friends and consuming alcohol. This group was also reported more frequent exposure to rock concerts and public parties involving alcohol which may be viewed as additional high-risk situations.

Farrow (1988) assessed the several personality factors of 152

adolescent drivers who were convicted of DUI. He found that those convicted of DUI more often endorsed feelings of powerlessness and stressful life events than did drivers without citations. The convicted offenders were more likely to indicate that alcohol made them "loud, unafraid, daring, and aggressive" than were the non-convicted offenders.

An investigation of 800 males in rural Tennessee, who were referred to an educational rehabilitation program for DUI offenses, found significant differences between DUI offenders with and without accident records on several role characteristics (Mookherjee, 1988). Those with accident records demonstrated a lower respect of the law, increased peer influence, more abusive drinking behaviors, lower leisure and job satisfaction, and conflicting communications.

This study was undertaken to determine the correlates or potential risk factors which predict whether rural adolescents, who drink or use drugs, will refrain from driving under the influence or will, in fact, drive in this condition. Most of the studies to date on this topic have looked at adolescent who have been convicted of DUI offenses. This study will replicate earlier results with individuals who self report DUI behavior. Many adolescents who drive under the influence do so without getting caught. Since many adolescent DUI behaviors are not identified by law enforcement officials and many that are identified are not

fully prosecuted (Farrow, 1987), this study therefore utilizes a more mainstream sample. A total of 25 risk factors identified in DUI research as well as in previous drug research as predicting usage levels were assessed in order to maximize the success of the prediction process in this study.

METHODS

Participants

The participants in this study were 426 rural high school seniors from a five county area of north central Idaho (Clearwater, Idaho, Latah, Lewis, and Nez Perce) and a three county region of southeastern Washington (Asotin, Garfield and Whitman). The gender and ethnic characteristics of the 12th grade sample is presented in Table 1.

Insert Table 1 about here

Design and Instrumentation

This study utilized a large written questionnaire which was administered as part of the needs assessment phase of Project EDAHOE (funded by the U. S. Department of Education). The questionnaire was developed to assess the drug use patterns and previously identified risk factors for substance use and abuse of the study participants. The surveys were anonymously administered during school hours in the winter of 1989-90.

Items in the questionnaire examined a range of demographic information, drug use levels over the previous six months, attitudes towards drugs and their usage, perception of community use levels, basic knowledge about drugs, other selected risk factors, and general values. Of particular concern to this paper is a self report item about personal DUI behavior. On this item respondents indicated whether they never drove a motor vehicle when they were drunk or high, whether they had done so once or twice, whether they had done so between three and ten times, or eleven or more times. Higher scores on this item are associated with more frequent DUI behaviors.

Predictors/Risk Factors for Adolescents' Who DUI

Nine previously identified risk factors were assessed using the same items as reported by Mayton (1989). In addition to these nine factors sixteen other variables known or thought to be related to drug usage or DUI were added. The complete list of all 25 potential risk factors included in this study is presented in Table 2.

Insert Table 2 about here

RESULTS

While a little over half of the respondents (54.7%) indicated they did not drive when they were drunk or high, 27.7% did so once

or twice, 15% reported they did so between three and ten times, and the remaining 2.8% drove a car while under the influence of drugs eleven or more times. Because the research on DUI points to gender as a major differentiating factor, a chi-square test was performed to assess gender differences across the DUI variable. Males did report DUI behaviors significantly more frequently than females (26.34, $df = 3$, $p < .001$). The DUI behavior by gender percentage breakdown is presented in Table 3.

Insert Table 3 about here

The correlation coefficients between each of the 25 risk factor variables and the frequency of self-reported DUI behaviors are presented in Table 2. A total of 23 of the 25 reached statistical significance.

A stepwise multiple regression analysis was run using all 25 risk factors as predictor variables. This regression analysis identified nine significant predictors of driving while under the influence which accounted for over 42% of the variance. Amounts of alcohol consumed at a time, binge drinking patterns, levels of drug usage at school or school events, presence of drug user support groups at school, history of getting into trouble with drugs, involvement in extracurricular activities, perceptions of the harmfulness of drugs and perceived knowledge gained from exposure

to drug education messages predicted driving while drunk or high. Males were also more likely to drive under the influence than females. Each of the nine significant predictors along with their respective regression coefficients and beta weights are presented in Table 4.

Insert Table 4 about here

Based on this analysis adolescents who have driven under the influence tended to do the following more so than their peers who don't drive under the influence:

- 1) Drink more at a time when they did consume alcohol.
- 2) Engage in binge drinking more often.
- 3) Get high on alcohol and drugs at school or school related events more often.
- 4) Attend school which do not have a support group of students with similar problems/concerns.
- 5) Have a history of getting into trouble because of drinking or using other drugs.
- 6) Engage in more extracurricular school activities and non-school activities.
- 7) More likely to be male.
- 8) Perceive tobacco, alcohol, and drug use to be less harmful.
- 9) Report that they learned less from drug education lessons.

DISCUSSION

The nine significant predictors of adolescent driving while under the influence identified by this study indicate the need for prevention programming which targets specific behaviors, perceptions and alternative experiences to use. Adolescents who drive under the influence not only report that they learned less

from drug education lessons but they also perceive tobacco, alcohol, and drug use to be less harmful than those who do not drive under the influence.

A better understanding of why the knowledge and the dangers of drugs do not get through to adolescents who drive under the influence needs investigation. The significant correlations of DUI with perceived levels of adults', peers', and friends' alcohol and drug use, in addition to significant correlations with perceived approval for their own usage from adults and peers, indicates this failure of drug education may be a function of competing messages and pressures to use and drive.

The high risk behaviors predicting driving while under the influence were the amount of alcohol consumed at one time, binge drinking, and consuming alcohol and other drugs at school or school events. Extinguishing these targeted behaviors would serve as an appropriate goal for any prevention program. The target behaviors correlate with the skewed perceptions of adult use within the community, the acceptance of peer use, and a lack of connectedness with more socially-appropriate endeavors (i.e., extracurricular activities), therefore, the development of a comprehensive prevention program would require addressing all of these variables.

The results of this research supported earlier studies which cited that males are at greater risk for making the choice to consume alcohol and other drugs and drive (Mookherjee, 1988; Farrow, 1987a; Farrow and Brissing, 1990; State of Idaho, 1990).

The importance for targeting this group for drug education efforts seems clear.

This research replicates findings which suggest a need to develop prevention programming which does not exclusively fall into the school domain (Mayton, 1989). The data suggests a need to provide abstaining messages to youth which are directed at correcting their misperceptions of the level of social acceptance of adolescent and adult abuse of alcohol and other drugs, especially in conjunction with the use of automobiles. Given prior findings which identify the automobile as an "extension" preceding and following social events, the separation of risk factors associated with alcohol and drug use from the even greater danger of such use in conjunction with automobile operation deserves vigorous and continuous emphasis in prevention education programs, as well.

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Table 1
Demographic Characteristics of High School Senior Respondents
N = 426

Sex Breakdown

Male	51.8 %
Female	48.2 %

Ethnic Breakdown

Caucasian	89.5 %
Native American Indian	9.1 %
Other Minorities	1.1 %

Table 2
Predictor Variables for Driving Under the Influence

DUI Risk Factor	Definition of Risk Factor	Correlation with DUI
Low Educational Achievement	One item	0.18 ***
Limited Educational Plans	One item	-.17 ***
Reported School Attendance	Two items	0.15 **
Participation in school and community activities	Two items	-.02
Availability of a Drug Support Group at School	One item	0.16 **
Alcohol Use at an Early Age	One item	0.05
Usual Amount of Alcohol Consumed at One Time	One item	0.51 ***
Frequency of Binge Drinking	One item	0.45 ***
Frequency of Getting "High" at School and School Events	Three items	0.34 ***
Frequency of Polydrug Use	One item	0.46 ***
Perceived Levels of Adult Drug Use	Four items	0.27 ***
Perceived Levels of School Mate Drug Use	Three items	0.19 ***
Perceived Levels of Friend Drug Use	Three items	0.30 ***
Perceived Parental Approval of Drug Use	Four items	0.29 ***
Perceived Peer Approval of Drug Use	One item	0.29 ***
History of Getting Into Trouble Because of Drugs	Four items	0.42 ***
Ease of Access to Alcohol and Drugs	Three items	0.10 *
Perceived Harmfulness of Drug Usage	Six items	-.24 ***
Self Assessed Knowledge from Drug Education	Five items	-.12*
Low Religious Commitment	One item	-.17 ***
Gender	One item	0.22 ***
Self Esteem	Four items	-.12 *
Law Abidance	Four items	-.34 ***
Positive Outlook on Life	Four items	-.12 *
Perceived Parental Support	Four items	-.14 **

*** p < .001

** p < .01

* p < .05

Table 3
Prevalence of Driving Under the Influence

About how many times have you been "high", "drunk", or "stoned" while driving a car or other motor vehicle?	Percentage of Males	Percentage of Females	Total Percentage
I never have.	47.5	61.1	54.5
Once or twice.	25.4	29.6	27.7
Between 3 and 10 times.	21.1	9.3	15.0
Between 11 and 20 times	5.7	0.0	2.8
N =	209	216	425

Table 4
Stepwise Regression Analysis

DUI Significant Predictor	Regression Coefficient	Beta Weight
Usual Amount of Alcohol Consumed at One Time	0.167	0.291
Frequency of Binge Drinking	0.180	0.209
Frequency of Getting "High" at School and School Events	0.337	0.142
Availability of a Drug Support Group at School	0.390	0.154
History of Getting Into Trouble Because of Drugs	0.284	0.133
Participation in school and community activities	0.104	0.136
Gender	0.187	0.112
Perceived Harmfulness of Drug Usage	-.180	-.090
Self Assessed Knowledge from Drug Education	-.110	-.083
(Constant)	-.116	*****
Multiple Correlation	R = .65	R square=.42